The Plastic Aftertreatment on the High Tenacity Rayons. (IV)

AUTHOR(S):

Saito, Narao

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Lauricacid-monoethanolamide (L. M.) or diethanolamide (L. D.), prepared from lauric acid (b. p./25mmHg 195-215°C.) and monoethanolamines or diethanolamines, are condensed with ethyleneoxide (EO) at various proportions using metallic Na as catalyst at 130-140°C.

The results are as follows.

	Material	Na	Absorbed EO mols /OH 1mol
L.M. 5.2	L.M. 10g	0.3g	5.2
L.M. 7.7	L.M. 10g	0.3g	7.7
L.D. 2.0	L.D. 5g	0.1g	2.0
L.D. 5.5	L.D. 10g	0.3g	5.5

Ethyleneoxide vapor inlet speed ca. 6 g/hr.

The surface tensions of their aqueous solutions are ca. 30-35 dynes/cm at 5-0.1 % concentrations.

B) Transesterification coconut-oil with triethanolamine

The authors transesterified coconut-oil with triethanolamine using anhyd. Na_2CO_3 as catalyst.

The results are asfollows.

Reaction Temp. 200°C, Reaction Time 3 hrs. anhyd. Na_2CO_3 0.15 g

	Coconut Oil	Triethanolamine	Hydroxyl value of reaction-products
CT (1)	21g	6g	155
CT (2)	21g	12g	233
CT (3)	19.5g	14g	219

The surface tensions of their aq. dispersions are ca. 32-36 dynes/cm at 5-0.1% concentrations.

30. The Plastic Aftertreatment on the High Tenacity Rayons. (IV)

Narao Saito

(Horio Laboratory)

The present stage of the author's research was briefly reviewed in contrast to a general status of this kind of aftertreatment hithertofore prevalent here in Japan, now that the author's research proved to have made a pronounced step forward.

It was microscopically shown that by the new method the thickest skin layer of the rayon yarn or staples was effectively penetrated by the plastic liqor, (wich had only been very poorly attained by the usual method,) to the result that the obtained rayons were made to possess higher resilience and higher knot strength and elongation as shown in the following table. (The higher resilience is shown in the following separate paper).

Fibers	wet Strength (g/d) wet	Δ(g/d) w	Elong. (%) w	Denier (d)	Knot Strength dry (g/d) k	(g/d)kw	Knot Elong. wet (%) k	(%)kw
Untreated Benberg yarn	1.15	—	21.4	93	1.67	1.09	13.5	20.0
Treated Bend. y.	1.39	20.0%	27.5	116	1.91	1.39	15.1	28.1
Untreated Crimped Staple	1.66	—	29.0	5.25	1.03	—	16.6	—
Treated C. S.	1.80	16.63	32.8	5.62	1.25	—	18.1	—
Untreated 2-bath Method S.	1.56	—	30.8	1.35	1.58	—	15.38	—
Treated 2-bath M. Staple	1.96	25.63	30.9	1.34	2.08	—	16.7	

The importance and the technical significance of this new method already stated was specially emphasized in that the rayons, especially viscose rayons could only be relieved from their present inconsistency in their inevitable and inborn properties: the inconsistency, which, arising from the method of preparation now available, consists in the fact that the fiber, having the more tensile strength depending on the thickness of the skin, the lesser strength it will tend to possess under higher twists or a knotted state.

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31. On the Properties of the Fabric Processed by a New Plastic Aftertreatment. (I)

Measurements of the Running Crease Resistance

Narao Saito

(Horio Laboratory).

A short introductory comment on the running crease resistance was given together with the results obtaind with some fabrics available on the market, including that of the U. S. A. and England.

The fabrics processed after the method described in the foregoing paper gave